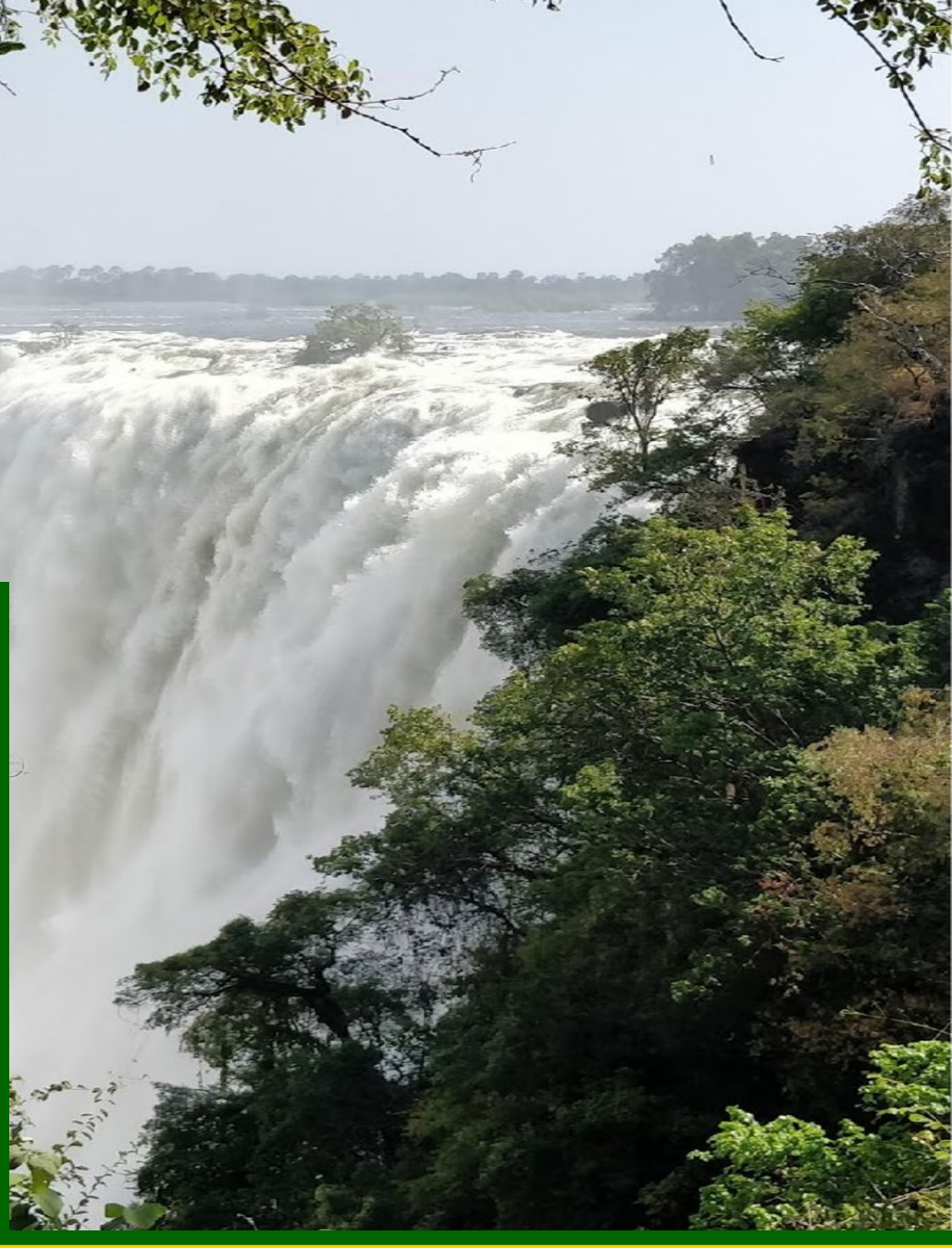
Zim-TTECH
Zimbabwe Technical Assistance, Training & Education Center for Health

I·TECH
Fostering Healthier Communities



Unique Patient Identification in Zimbabwe

July 2023

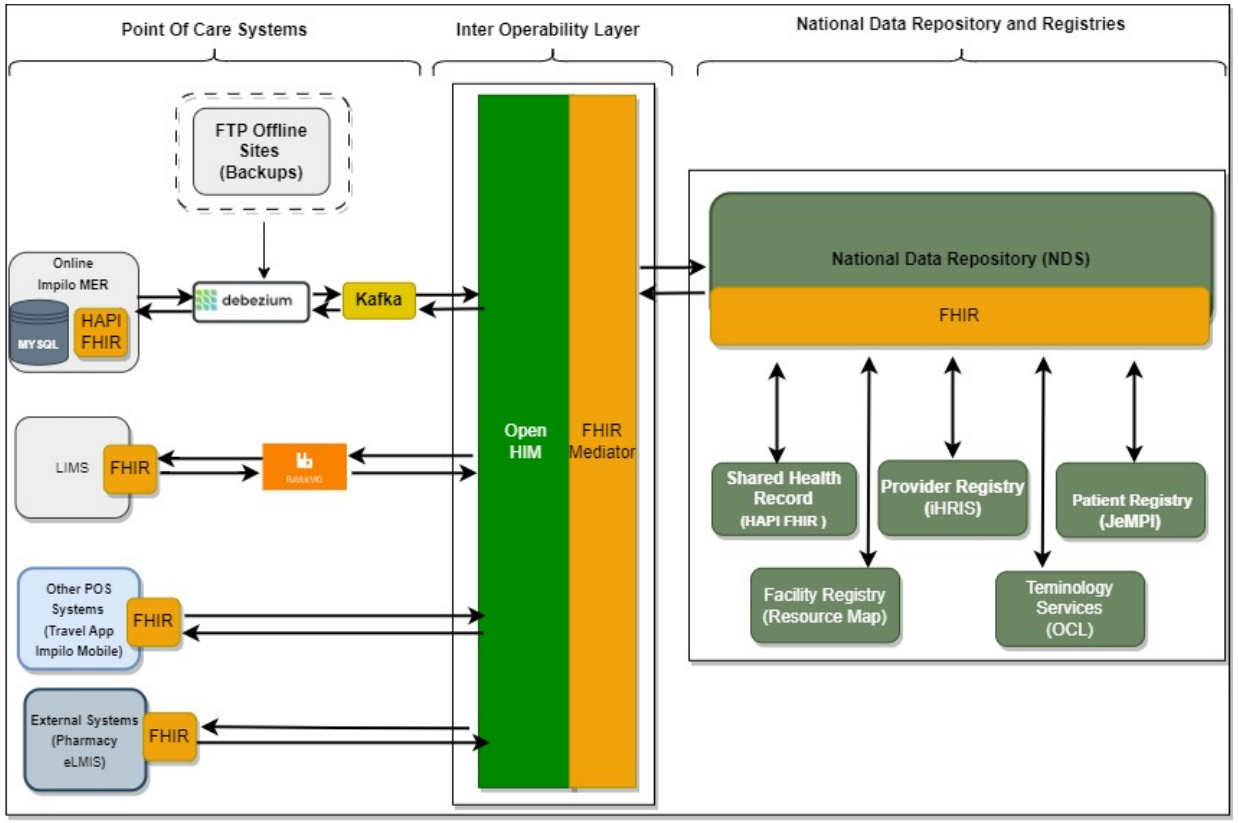
Contents

- Introduction
- Zimbabwe Digital Health Platform
- Technology Stack
- Use cases
- Current Implementation
- Challenges
- Future Plans

Introduction

- The Zimbabwe Electronic Health Care System (Impilo E.H.R) consists of two types of facilities.
  1. Online Facilities:
     - They have connection to central repository and can transmit data in real time.
  2. Offline Facilities:
     - They do not have direct connection to central repository and data is manually uploaded to the central repository
- Zimbabwean Health system does not enforce the use of national identifiers like ID Number , Passport Number to be used as mandatory identifiers of patients in Impilo E.H.R
- Patient identification is done at both facility level and central level
- A person id (System generated) is used to identify patients in E.H.R
- MoH currently pursuing legislation on the use of National ID or Patient ID

Zimbabwe Digital Health Platform



LEGEND

iHRIS :IntraHealth International
HAPI : HL7 Application Programming Interface
OpenHIM : Open Health Information Mediator
FHIR : Fast Healthcare Interoperability Resources
MySQL :Relational Database Management System
eLMIS : Logistics Management Infomation Systems
LIMS : Laboratory Information Management System

Zimbabwe HIE Technology Stack

Point of Service

Impilo ELECTRONIC HEALTH RECORD

SENAITE

An **HIE in a Box** with a **context-specific** collection of components that fit required **roles** as described in the **OpenHIE architecture** specifications.

Principles:

- Horizontally Scalable
- Configurable and Extensible
- Standards-based

Interoperability & Data Pipelines

OpenHIM

HL7® FHIR®

debezium

ICD-10

APACHE kafka

LOINC® from Regenstrief

Infrastructure, Maintenance, & Security

Instant OpenHIE

docker

Coraza

caddy

Prometheus

Grafana

Registries and Repositories

OCL

OpenCR OPEN CLIENT REGISTRY

PostgreSQL

HAPI FHIR

NDR

SHR

Analytics and Reporting

Power BI

dhis2

Open Health Stack

Apache Superset™

Use Cases

Patient Level

Continuity of care:

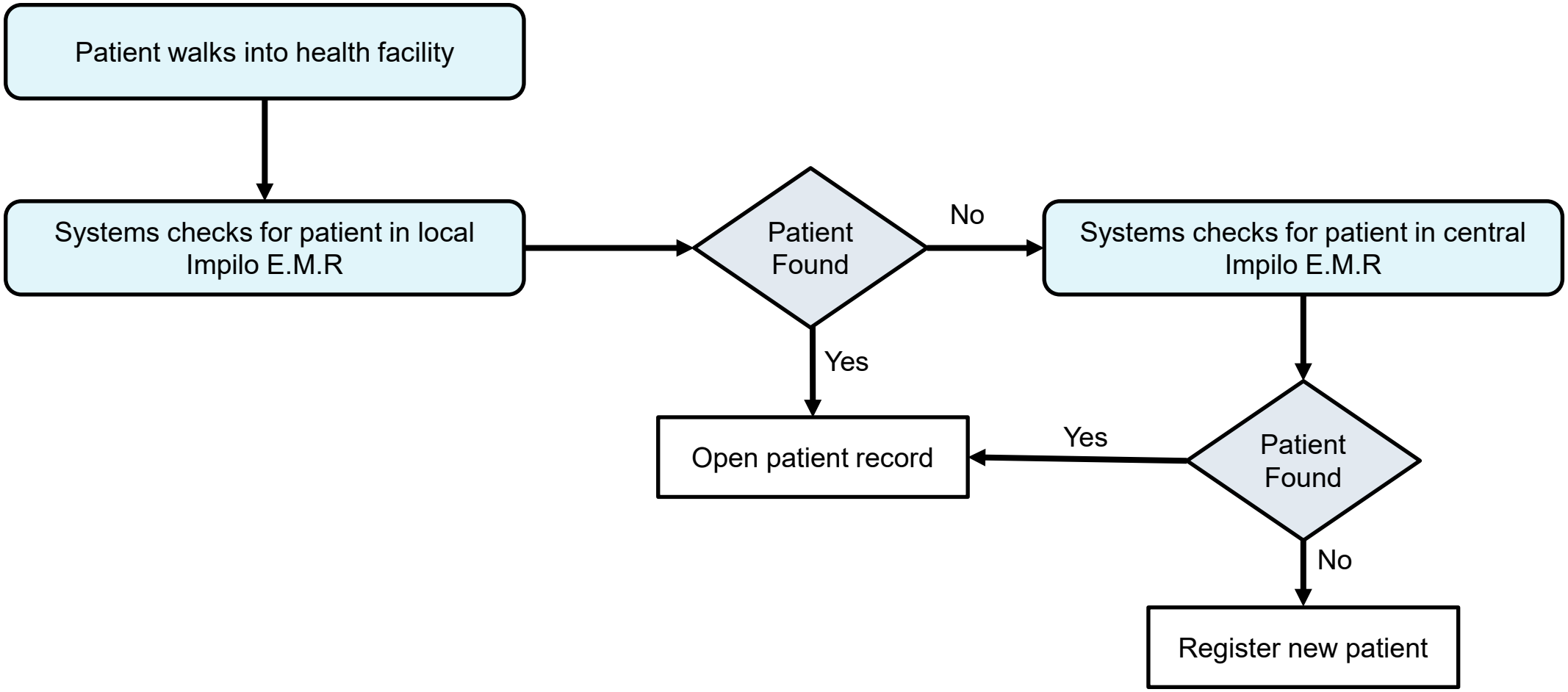
- To ensure that all relevant information about a patient's health history, diagnoses, allergies, and treatments is readily available to any healthcare professional involved in their care.

Service Delivery Level

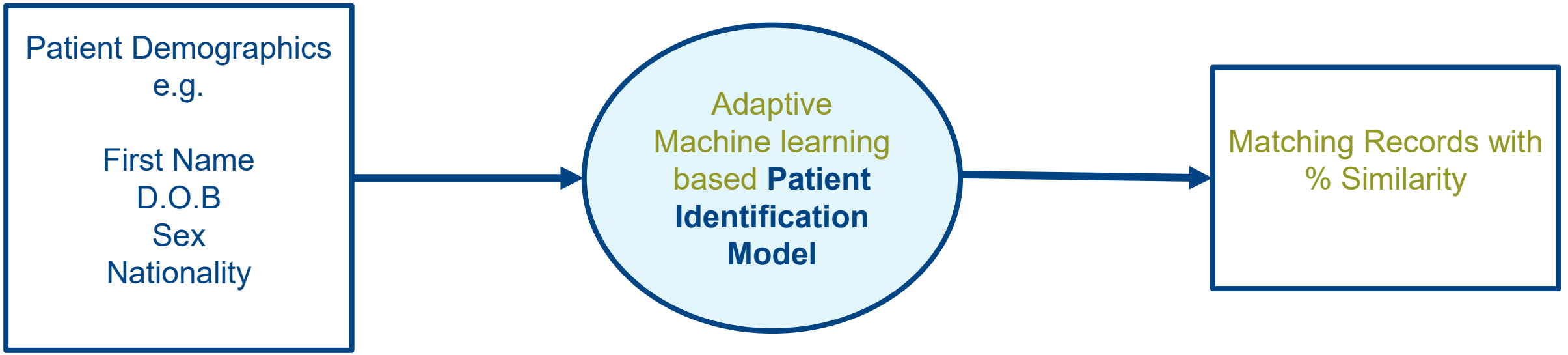
Public health management:

- Accurate identification helps public health agencies track the spread of diseases, monitor outbreaks, and implement appropriate interventions to protect communities' health.

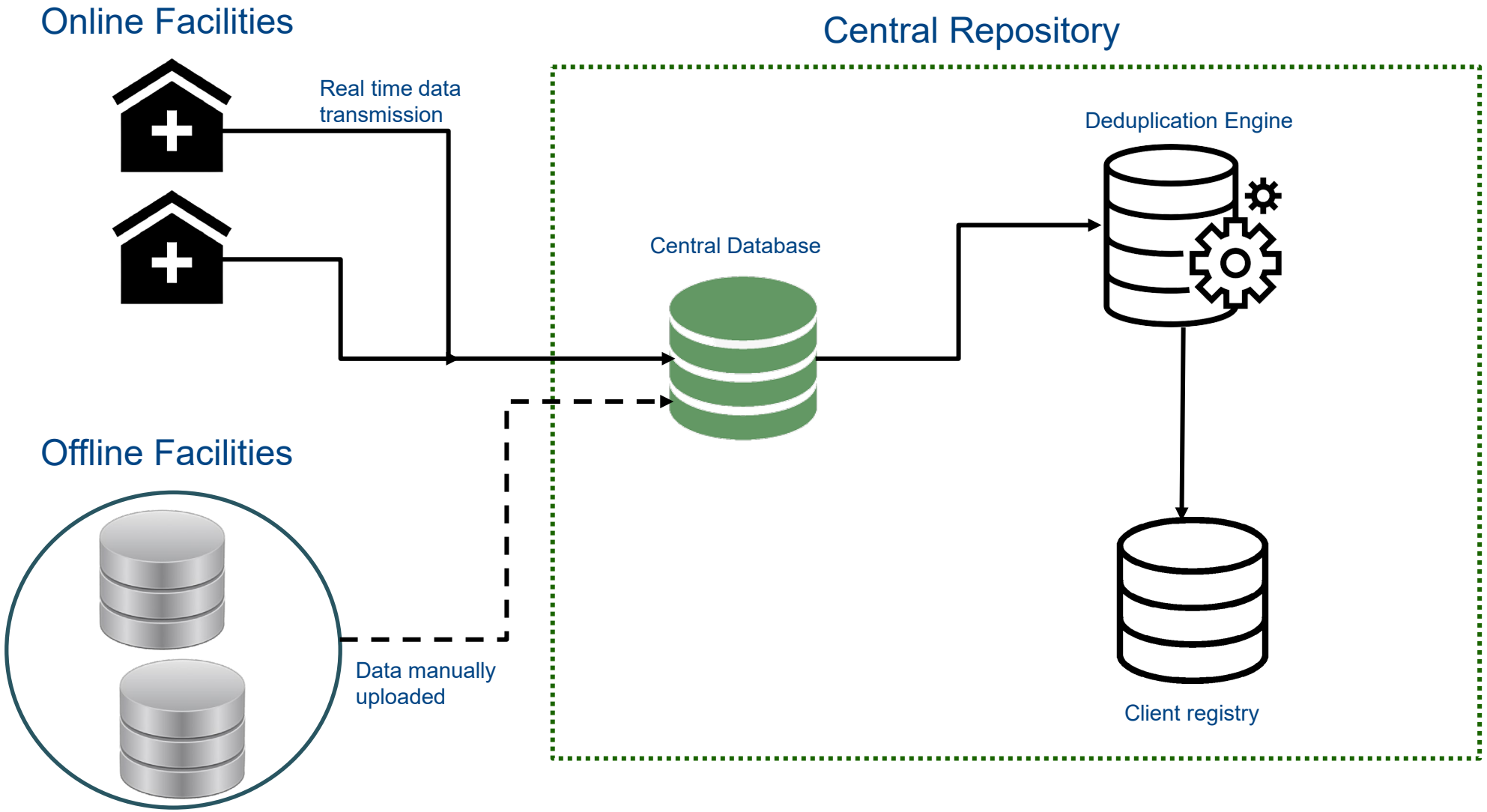
Current Implementation at Facility



Current Implementation at Facility



Current Implementation at Central Level



Challenges with Patient identification

- No unique identifier for patients
- Some Zimbabwean regions have very similar names which makes it difficult to deduplicate.
- Most of the facilities are offline hence making it impossible to deduplicate in real-time at the central level.
- Unlike Malawi or Zambia, the Zimbabwe Government is yet to implement a VPN or government-wide area network connecting facilities
  - There is one used by a legacy system (connected to 350 sites) currently being resuscitated
- A lot of nomadic patients

Future plan for Patient identification

Use of biometrics : - Fingerprint reader
Iris Scanner

Advantages in Zim Context	Disadvantages in Zim Context
Improved patient identification: Biometrics can increase accuracy in uniquely identifying patients	**Cost**: Implementing biometric technology can be expensive. The cost of purchasing and maintaining biometric devices, software, and infrastructure can be a significant barrier.
Time savings: Biometric authentication increase speed of searching for patients.	**Infrastructure limitations:** Biometric use will have a limitation on facilities that are offline
Accessibility: a good use case for unconscious patients, it's easy to use the fingerprint to identify the patient (for already registered)	
Scalability: Biometric systems can easily scale up to accommodate large numbers of patients without compromising accuracy or efficiency.	
A prototype has already been developed	

Thank You!